

(Vegetable Product Series, No. 40.)
(Medicinal Products.)

THE
AGRICULTURAL LEDGER.

1898—No. 6.

OROXYLUM INDICUM.

(SEEDS.)

(DICTIONARY OF ECONOMIC PRODUCTS, Vol. V., O. 233-41.)

DAMREE SEEDS.

THEIR REPUTED USE IN ALMORA AS A MEDICINE FOR CATTLE.

A Review of Correspondence on the subject with notes giving results of an analysis of the seeds by MR. D. HOOPER.

Other DICTIONARY articles that may be consulted :

Melia Azadirachta, Vol. V. M. 363-93.

Oxen, Vol. V. O. 551-94.

Pongamia glabra, Vol. VI., Pt. I. P. 1121-37.



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- (2) To secure the maintenance of uniform ledgers (on the plan of the Dictionary) in all offices concerned in agricultural subjects throughout India, so that references to ledger entries made in any report or publication may be readily utilised in all offices where ledgers are kept ;
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A Review of Correspondence on the subject with notes giving results of an analysis of the seeds by MR. D. HOOPER.

The interesting information conveyed in the following correspondence throws fresh light upon a product which has hitherto received little attention at the hands of Europeans in India. The bark of **Oroxylum indicum** is much better known to the natives of India as a medicine than the seed, and has long been employed as one of the ingredients of *Daramula* or ten drugs mentioned by Sanskrit writers. The bark is used for various complaints administered internally, but as an outward application it is equally beneficial. Rheedé noticed the use of the bark as an application to wounds and fractures. Boiled in Sesamum oil the root bark is a remedy in otorrhoea, a muco-purulent discharge of the ear. The bark is also much used by the agricultural classes as an application to the sore backs of draught cattle; for this purpose it is ground to a paste with water and an equal proportion of turmeric, and rubbed on the part affected.

It is not very surprising then to find that the seeds have somewhat similar properties to the bark and are being used for like disorders as the following observations will show.

INTRODUC-
TORY.

Oroxylum
bark.

O. 233-41.

**OXYLUM
indicum.****Damree Seeds, a Medicine****REVIEW
of
CORRE-
SPONDENCE.**

From J. G. Bellair, Esq., Proprietor, Choukooor Tea Factory and Dairy Farm, Meerang P. O., Almora, to the Reporter on Economic Products to the Government of India, dated the 16th December 1896.

**Damree
seeds.**

I am sending you by Parcel Post paid to-day the seed of a plant known here as "Damree," and I shall be very glad if you can inform me of its botanical name. The tree is found at 3,000 feet and lower, and sheds its leaves in winter. The seed (pod) I have had to cut in half for the convenience of sending.

The flaxy seeds found inside the pod are the best cure I know of for ringworm in calves, one or two mixed with some finely ground *bhut** (*Glycine hispida*) and administered to each calf night and morning, will cure the worst cases of the disease known here as "Damree" also. Whether the disease was named after the place or the plant after the disease I cannot say.

**Seeds
identified.**

The seeds were identified by Dr. Watt as those of *Oroxylum indicum*, Vent., a tree belonging to the Natural order BIGNONIACEÆ. Our correspondent was informed of the name of the seeds and at the same time was asked for further particulars regarding the peculiar veterinary use to which the seeds were put. The following interesting reply was received in response to the request.

From J. G. Bellair, Esq., Proprietor, Choukooor Tea Factory and Dairy Farm, Meerang P. O., Almora, to the Reporter on Economic Products to the Government of India, dated the 13th January 1897.

Your letter of the 8th instant to hand yesterday, and I note that the tree known here as "Damree" is *Oroxylum indicum*. After sending you the pod I had come to the conclusion it was *Bignonia indica* from what K. L. Dey says in his book on indigenous drugs, and from Brandis' description of the tree.

**Peculiar
Cattle
disease.**

I am not wrong in saying the seed of the tree cures the disease known here as "Damree" for that I am quite certain of, but I may be wrong in thinking the disease is ring-worm. The disease is common amongst native owned cattle, but I never had a case in my herd until one year when I was given a Brittany bull and cow lately imported by Government. A calf was born about 3 months after arrival of the pair, and very soon after birth the calf got spots about the size of a 4 to 8 anna bit on the face, ears and neck from which the hair disappeared and which had a slightly red look. I was told the disease was "Damree," and that I should find a hard circle

* Otherwise known as the Soy Bean.—Ed.

for Cattle.	(D. Hooper.)	OROXYLUM indicum.
<p>about four annas in size on the roof of the mouths, and I was also told that probably all my calves would get the disease and sure enough all did. Natives said the seed of "Damree" was the cure, but none could then be got. These circles spread all over the animal till at last the calves look most peculiar. I washed with phenyle and gave sulphur internally, but could not see much benefit; I then continued the sulphur internally and applied it as ointment externally; paid great attention to keeping of the calves' houses clean, and once or twice a week either burnt sulphur or sprayed with phenyle, and in about 4 or 5 months the disease was beaten, but not before the worst cases had died. I was told that next year I might get the disease again in my calves, so I kept my eye on the houses and twice a month fumigated them, and in December laid in a stock of "Damree" seed. The disease did appear and on the first ring showing itself I did as the natives suggested and gave a seed or two with ground <i>bhut</i> (<i>Glycine hispida</i>) for a few days; few calves got more than 2 or 3 rings and these disappeared soon, and the calves not attacked, I presume from getting a few seeds, were never attacked. Now I do not fear the disease in the least, for directly it appears I dose every young animal with the seeds.</p> <p>Veterinary-Surgeon Raymond was this way one year and I mentioned the disease to him, but could not show him a case. he said it might be ring-worm and so I called it that, but it may be something quite different.</p> <p>The calves attacked badly if not given "Damree," are covered with these rings which look exactly as if one had taken a metal seal and burnt the calf all over; the calves at first do not seem out of sorts, but as the number of rings increases they get thinner, have no spirit and the smaller ones will die; but calves of 6 to 9 months will generally pull through but they are miserably thin when over it.</p> <p>I am at 7,000 feet and "Damree" or <i>O. indicum</i> grows at 3,000 feet or in the Ramgunga Valley 16 miles from this, and it is not distributed everywhere in the Valley. I know the tree is to be got about Ranibagh and Kalidungi below Naini Tal, and I will send your letter to Mr. F. E. G. Mathews, a very old resident and interested in arboriculture, etc., and I will ask him to send you down what you want. He will find 50 trees at Ranibagh, whereas I might ride 16 miles and</p>		<p>REVIEW OF CORRE- SPONDENCE.</p>
		<p>Usual reme- dies tried.</p>
		<p>Damree seeds successful.</p>
		<p>Distribution of Oroxyllum.</p>

**OROXYLUM
indicum.**
Damree Seeds, a Medicine
**REVIEW
of
CON-
SPONDENCE.**
**Reference to
Veterinary
Department.**
**Tinea
tonsurans.**

walk 3 or 4 along the valley without finding 3 trees; when I want a few dozen pods it takes one of my men a week to get them.

No other part of the tree is valued in this district, except the seeds and they are only used for the disease known as "Damree."

On the receipt of the above letter from Mr. Bellairs, the Inspector General of the Civil Veterinary Department was referred to on the subject of the disease of cattle known as *damree*. It was considered the wisest course to obtain the technical name and a professional description of the disease, and to ascertain the value of **Oroxylum** seeds as a curative agent. The tree is so very common all over India that any special virtue attaching to its products should be investigated and made generally known.

The Inspector General, Civil Veterinary Department, in reply to the enquiries made by this office, obligingly forwarded a note on the disease drawn up by his assistant, and it was pointed out that it was very unusual for a disease of this nature to be treated solely by internal remedies, as they generally yielded only to such strong chemicals as silver caustic and acids.

From the Assistant to Inspector General, Civil Veterinary Department, to the Inspector General, Civil Veterinary Department, - No. 9, dated 14th April 1897.

With reference to your letter No. 263 C., dated 27th February 1897, I have the honour to state that the disease "Damree" alluded to, is similar to the disease **Tinea tonsurans**, and which is very common among young cattle in England. It is caused by the fungus **Tricophyton tonsurans**. Its constituents are smaller than those of **Favus**, and it does not project as cups on the surface, simply invading the epidermal structures and constituting a fine powder on the epidermis. It affects young animals especially when exposed to damp, and with dirty skins, and is readily transmissible from ox to ox, or to man and other animals. It attains a greater luxuriance of growth in the ox than in man, and the disease, when first received by man from the ox, is so luxuriant that it has been described as specifically distinct.

Symptoms.—Circular patches in various parts of the body, characterised by the absence of the hair the presence of vesica near the outer margin, and a scurfy condition of the central parts. Here and there in the ring may be seen a dry-looking hair, of a greyish

for Cattle.

(D. Hooper.)

OROXYLUM
Indicum.

colour, somewhat twisted at the root, or the stump of a hair which has broken off. Magnin considers the true *Tinea* of the ox distinct from that of the horse, and terms it *T. decalvans* or *T. depilens*. The he finds to be generally nearly three times the size of *T. tonsurans*, to give rise to more formidable symptoms when communicated to the horse by inoculation, and to induce a different condition of the affected hairs. In calves, the disease affects the eyes, ears, neck withers, and limbs.

Treatment.—These cases are usually treated with such remedies as Nitrate of Mercury, Nitrate of Silver or preferably Sulphurous Acid, but at the best the disease is difficult to relieve. It would be well to further test the seeds of *Oroxylum indicum* and communicate the results to the English Veterinary Journals.

The enclosures of the letter under reply are herewith returned.

Rev. A. Campbell, Manbhum, kindly furnished a supply of the seeds of *Oroxylum indicum* for chemical examination and experimental purposes. They are known in that district as *bana hutuk*.

The seeds are thinly discoid, flat, and very light buff coloured. They are winged and translucent (hyaline) all round except at the base and the largest measure 3 in. by 1½ in. When powdered they have a yellowish colour and a peculiarly rancid or oily odour, and a bitter and acrid taste.

Chemical Composition.—The powdered seeds exhausted with various solvents, and the moisture and ash at the same time estimated gave the following proximate composition—

Moisture	3.65
Oil	29.34
Resin and bitter principle	12.96
Mucilage and albumen	20.54
Fibre	32.71
Ash	9.80
	<hr/>
	100.00

The oil was green in colour, bitter in taste and fluid above 72°. The bitterness was due to a principle found also in the spirit extract of the seeds which had a distinctly yellow crystalline appearance. This principle was insoluble in water and gave a peculiar reaction with caustic alkalis which consisted in assuming a red colour passing

REVIEW
OF
CORRE-
SPONDENCE.

RESULTS
OF
CHEMICAL
ANALYSIS.

Composition
of seeds.

OROXYLUM indicum.

Damree Seeds, a Medicine for Cattle.

**RESULTS
of
CHEMICAL
ANALYSIS.**

into a green on exposure to the air. This yellow substance is no doubt the same as that which was detected in the bark of this tree by Messrs. Naylor and Chaplin, and called Oroxylin (see *Pearse Journ.*, September 27, 1890, *Pharmacographia Indica*, Vol. III p. 10).

**Composition
of Oroxylin.**

Werner (*Beitr. Z. Kenntn. neuerer Drogen*, Diss. Erlangen, 1887) since the discovery of oroxylin has made a minute anatomical examination of the bark and has performed an elementary analysis of its bitter principle. He found 67.49 per cent. of carbon and 4.19 per cent. of hydrogen. At the same time he tried the physiological action of oroxylin. A frog after a subcutaneous injection of 150 m. gm. intimately mixed with water, exhibited no perceptible change. A rabbit treated in the same manner showed a rise of temperature in 3 or 4 hours, the respiration was accelerated and on the other hand, there was a decrease of the pulsation from 170-160 to 130.

**Physiological
tests.****Seeds a
Famine food.**

However active the seeds may be when medicinally applied their potency is much reduced by heat and boiling. In Balrampur during the famine of 1897, the seeds of **Oroxylum** were parched, ground into flour and made into bread. The agent of this district also reported that on some occasions the seeds were eaten raw (*Innes*.) It would thus seem that there is nothing present of a decidedly poisonous nature in the seeds, and this opinion is supported by physiological tests made by Werner.

**Bitter oils of
Melia and
Pongamia.**

Bitter oils are much esteemed in India as applications for skin diseases. The oils of **Melia Azadirachta** and **Pongamia glabra** are widely used for these purposes, both on men and animals, and like many other remedies the nut of the seed is given internally while the oil is used as a lotion or liniment on the affected portion of the skin. Pityriasis and other parasitic affections have been removed by applying the bitter oils above mentioned, and there is reason to believe that the yellow active principle operates in the same manner as chrysophanic acid and destroys the growth of disease.

Mr. Bellairs is quite satisfied with the results obtained in using *damree* seeds for skin affections in cattle, and although the remedy might not accord with the usages of modern veterinary science, the publication of the facts may induce others to try a simple remedy within the reach of every Indian ryot.

O. 233-41.

G. I. C. P. O.—No. 139 R, & A, —20-7-98.—2,225—B. N. D.

All communications regarding **THE AGRICULTURAL LEDGER** should be addressed to the Editor, Dr. George Watt, Reporter on Economic Products to the Government of India, Calcutta.

The objects of this publication (as already stated) are to gradually develop and perfect our knowledge of Indian Agricultural and Economic questions. Contributions or corrections and additions will therefore be most welcome.

In order to preserve a necessary relation to the various Departments of Government, contributions will be classified and numbered under certain series. Thus, for example, papers on Veterinary subjects will be registered under the Veterinary Series; those on Forestry in the Forest Series. Papers of more direct Agricultural or Industrial interest will be grouped according as the products dealt with belong to the Vegetable or Animal Kingdom. In a like manner, contributions on Mineral and Metallic subjects will be registered under the Mineral Series.

The sheet and the title-page may be removed when the subject-matter is filed in its proper place, according to the letter and number shown at the bottom of each page.

NOTICE.

Future issues of this publication placed under either the "Special Vegetation" or "Special Forest Series" will not be included in the annual enumeration. Such papers are printed for Departmental purposes. Their unfortunate inclusion in the system of annual numbering has led recipients of the ordinary issues to think their sets incomplete.

The following pamphlets have already appeared as Special issues, and have accordingly been furnished to the public:—

1894	.	.	Nos. 8, 9, 10, 11, 13 and 14.
1896	.	.	No. 8.

